



NAVAL
POSTGRADUATE
SCHOOL

Management of AI Projects

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- AI Project Management Methodology
- AI Project Life Cycle Phases
- AI Project Management Challenges



- Use a formal methodology for managing AI projects
 - Formal project team
 - Reflects needed skills
 - Led by designated project manager
 - Authorized by project charter
 - Appropriate project life cycle
 - Includes phases, milestones, decision-points
 - Monitor and control project progression



- AI Project team members
 - Project manager
 - Data scientists
 - Data engineers
 - Software developers
 - Domain experts
 - Others as required



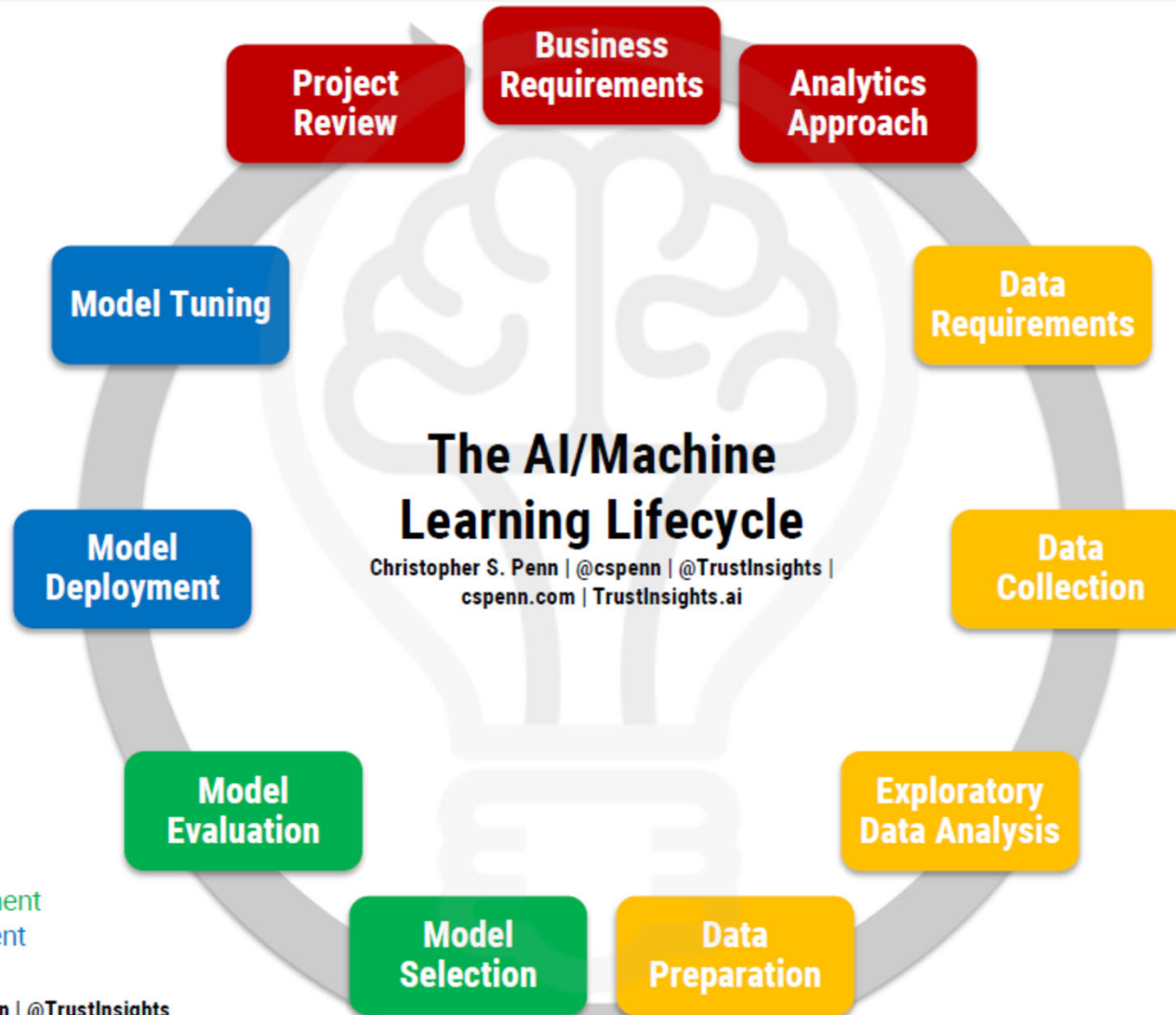
- AI Project Life Cycle Phases
 - Project Planning
 - Data Management
 - Model Development
 - Model Deployment
 - Project Review



- Project Planning
 - Understand business requirements
 - Determine analytics approach
- Data Management
 - Determine data requirements
 - Collect data
 - Conduct exploratory data analysis
 - Prepare data



- Model Development
 - Select model
 - Evaluate model
- Model Deployment
 - Deploy model
 - Tune model
- Project Review
 - Conduct after-action review
 - Determine lessons learned and best practices



@cspenn | @TrustInsights

Source: <https://www.trustinsights.ai/resources/thought-leadership/instant-insights/instant-insights-the-ai-machine-learning-lifecycle/8>

Christopher Penn, (2019)



AI Project Management Challenges

- Over-estimating the potential of AI solutions.
- Over-estimating team's potential to implement AI solutions.
- Underestimating the time required for data preparation.
- Difficulty in defining and measuring project success.
- Heavy dependence on the availability and quality of data.
- Behavior of the model increases uncertainty of outcomes.
- Need for post-deployment planning for model maintenance



- AI Project Management Methodology
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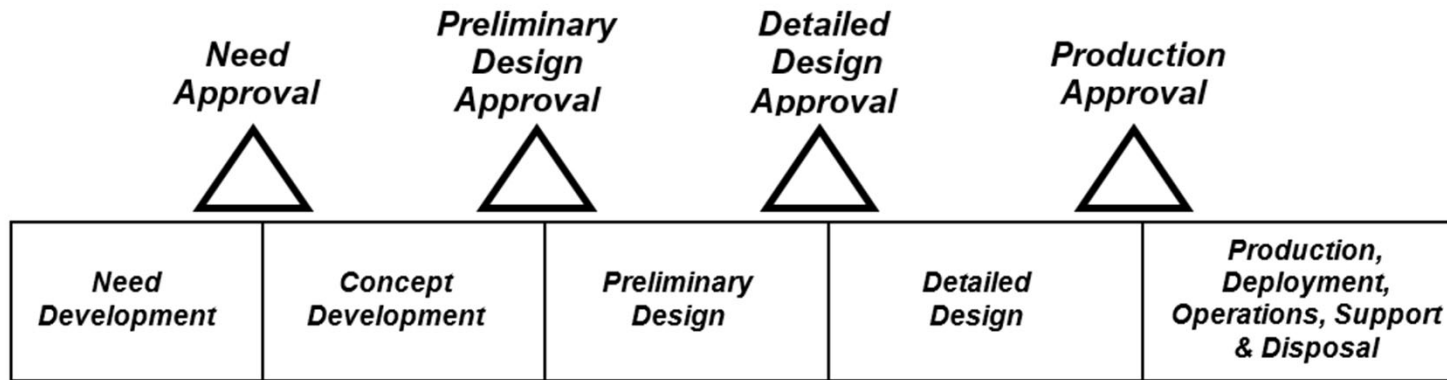
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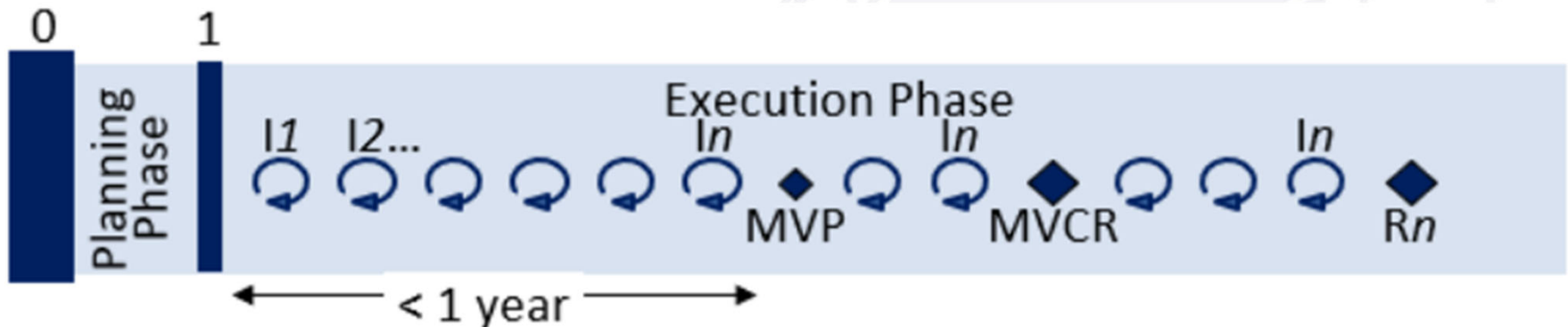
Back-Up Slides



Generic Project Life Cycle for Defense Acquisition (Rendon & Snider, 2019)

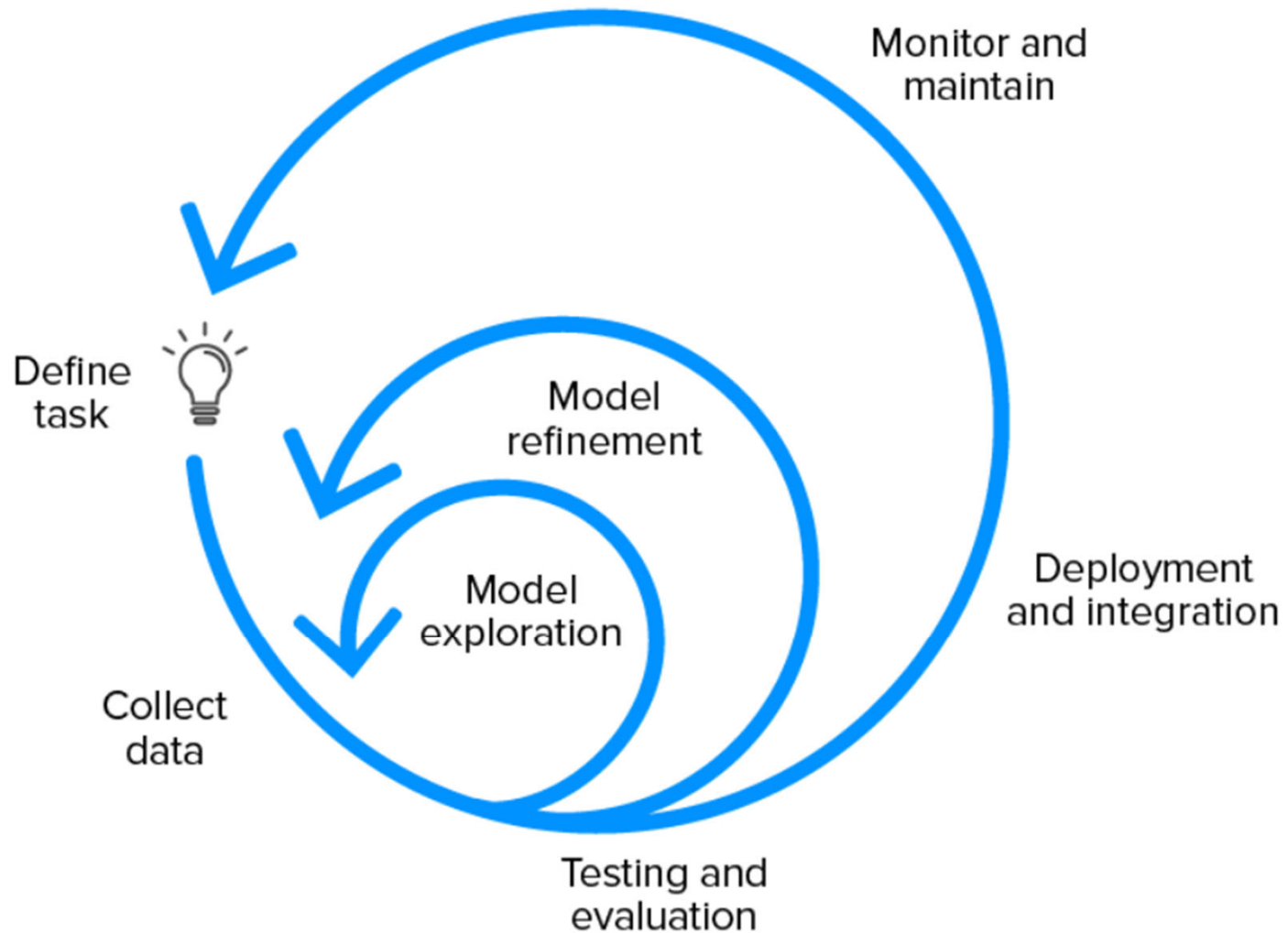


Traditional Software Acquisition Project Life Cycle





AI Project Management Methodology



Source: <https://appinventiv.com/blog/machine-learning-app-project-estimate/>

Sudeep Srivastava (2019)

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AI Project Management Best Practices

- Use non-uniform iteration cycles with appropriate time box/scope box requirements.
- Use of Checklists and SOPs.
- Training on AI project workflow and AI potential and limitations.
- Use efficiency, effectiveness, and experience success metrics.
- Collaboration for data collection required among all stakeholders to breakdown data silos.



- Consider adopting tools that automate data collection and preparation.
- Adopt a method for developing multiple models using “Champion-Challenger”.
- Involve the IT team consistently throughout the project, starting at the planning phase.
- Adopt MLOps to increase the likelihood of operationalizing the model sooner.
- Use surveys to solicit feedback from all stakeholders.